emphasise in the strongest manner the necessity for the organisation on a large scale of *scientific research and education.* Proposals for the reform of the Fishery Authority consist of the suggestion that the existing Fishery Board should cease to exist, or, rather; that it should be "assimilated in form to that of other Public Departments," being "completely manned by Civil Servants and with a permanent head," and coming into relation with the industry through a Consultative Board.

The Memorandum before us gives a short account of the pre-war yield of North European sea-fisheries. In the year 1912 Europe took about 7000*l.* per 100,000 inhabitants, Norway 128,000*l.*, Germany 3000*l.*, Great Britain 29,000*l.*, and Scotland 73,000*l.* This position of Great Britain it is our duty to maintain.

The scheme for the organisation of scientific research and fishery education exhibits a degree of insight into the conditions of the industry and a familiarity with the problems involved such as no previous recommendations have disclosed. The whole situation has materially changed since pre-war days. Ought our participation in international schemes of fishery investigation to terminate? Should any scheme of scientific research aim at the co-ordination of the English, Scottish, and Irish Authorities? The Memorandum says "Yes" to both questions. British interests in North European fisheries are so outstanding that they call for adequate attention; some other nations may not be prepared to go on with the work of the International Council, and if they do the Continent will again become the centre of gravity of the organisation, while in the industry itself Great Britain will remain the predominant partner; and, finally, the expense of time and money entailed by the frequent conferences under the old scheme was unattended by proportionate results. But all this need not imply isolation in matters of investigation—only formal withdrawal from the existing scheme.

In place of the three national Fishery Departments and some of the local Fishery Committees, which before the war instigated scientific research, the Memorandum suggests a single central council having the control of the funds voted by Imperial Parliament. The Council ought to contain representatives of each national Department, of the Meteorological Office, of the fishing-vessel owners, and of the industrial concerns dealing with curing, preserving, by-products, transport, and refrigeration. Recognising the movement in the public mind towards devolution of authority and administration, the "vital importance of combining scientific research with industry," and the necessity for close co-operation between the expert and the *entrepreneur*, the drafters of the Memorandum regard centralisation in London as detrimental. "It could not be accepted." The Council, the head of which ought to be a chairman and director, a man conversant with fishery matters, "and not appointed for political reasons," would expend, direct and allocate the administration of funds, publish reports, memoirs, and results of research, advise on supporting scientific work carried on in unofficial laboratories, devise schemes of investigation and systems of statistical collection, conduct propaganda, appoint agents abroad, publish intelligence, and conduct a fishery journal.

But the Central Council would not establish laboratories or actually conduct scientific investigation. That would be the work of the English, Scottish, and Irish Fishery Departments, and of the Marine Biological Association of the United Kingdom (for "in respect that pure science is the fountain from which applied science draws its life and force, the Marine Biological Association should receive a generous grant yearly out of the funds received by the Central Council"). Each of these four organisations would establish and maintain laboratories, and conduct research in accordance with the schemes submitted to them and the funds allocated. They would also organise schemes of fishery education and co-operate with educational authorities for that purpose.

Some matters dealt with apply specially to Scotland. The Department should seek to develop the new Education Act, which appears to provide for continuation and technical instruction, but not for higher fishery education. For the latter purpose a college of fisheries at Aberdeen is suggested, similar in scope to the Scottish College of Agriculture. This would provide for the education—"that is now a clamant necessity"—of those holding responsible positions in industry in all subjects that are relevant. It would provide for training in research, conduct bureaux of scientific and economic information, maintain a museum, and carry on a sub-department for co-operating with local schools and "encouraging pupils of ability."

Here we have the real grip of essentials. "The future of the industry depends on knowledge"; "Nothing will so surely secure this as opportunities for scientific knowledge." If the outlined schemes for education and scientific research are carried out, "the Scottish fishing industry will continue to hold its high place among the nations of Europe."

NOTES.

THE inauguration of the first boring for petroleum in this country, which took place at Hardstoft, near Chesterfield, on October 15, was an event of more than economic interest by reason of the confirmation it may afford of the speculations of competent oil-field geologists of the existence of oil in this country. Forty American drillers are engaged on the first boring, but provision of the necessary plant for drilling ten wells has been made; seven of these drillings are to be made in the vicinity of Chesterfield. Each of the wells will be fully equipped for a maximum depth of 4000 ft., and the principal occurrence of oil is expected to lie between 2000 ft. and this maximum. Lord Cowdray, to whom the nation is so much indebted for the assistance he has rendered in this pioneer work, claimed that although in America such experimental drilling would be known as "wild-catting," yet it was more than justified by to-day's knowledge, but was not a case for exaggerated hopes. Such a word of caution was very necessary, for it is so customary to think of oil-wells as yielding prodigious quantities that the low average of some five tons a day per well throughout the world is not realised. Last year the importation of oil into this country was valued at more than 36,000,000*l*. Even if all the ten wells yielded the above average, the contribution to our national requirements would be very little, and the present enterprise must be regarded more as exploratory than as likely to furnish any adequate proportion of our requirements.

PROF. W. J. POPE, in giving the first Streatfeild memorial lecture at the City and Guilds Technical College, Finsbury, on October 17, selected for his subject "The Future of Chemistry." He reviewed the past and present states of chemical science and industry, and referred to the good work accomplished by men like Meldola, Armstrong, Streatfeild, and others in training the men who during the last four years have been instrumental in establishing a chemical industry on a sound basis, and have enabled us as a nation to produce all those materials necessary for the successful prosecution of the war, many of which, prior to 1914, were to be obtained only from enemy countries. These results were rendered possible by the existence of a small but efficient company of chemists, many of whom were formerly students at the City and Guilds Technical College, Finsbury. The lecturer, in referring to the splendid prospects which the future held for chemical industry, reminded the present students that it rested with them how far this rich heritage of possibilities handed down by the labours of two generations of chemists was explored and developed. Sir Edward Busk, in moving a vote of thanks to the lecturer, referred to the indifference which existed prior to the war regarding applied chemistry, an indifference connected, no doubt, with the immense accumulation of wealth and the general prosperity which had favoured us as a nation. We had been sharply roused from our apathy, and no doubt by this time we all had a just appreciation of the importance of chemical science to national security and prosperity.

WE announce with much regret the death on October 18, in the ninety-first year of his age, of the Rt. Hon. Sir Edward Fry, G.C.B., F.R.S., late Lord Justice of Appeal.

MR. D'ARCY POWER will take "Cancer of the Tongue" as the subject of his Bradshaw lecture at the Royal College of Surgeons of England on Thursday, November 14, at 5 o'clock.

AN address on "Past and Future of the Fight against Tuberculosis" will be given by Sir Malcolm Morris at the Royal Society of Medicine, Wimpole Street, at 8 o'clock on Monday, October 28, the occasion being the opening of the winter session of the Tuberculosis Society.

THE engineering gold medal of the North-East Coast Institution of Engineers and Shipbuilders has been awarded to Mr. Harry R. Ricardo for his paper entitled "High-speed Internal-combustion Engines," which was read before the institution on April 30 last.

THE death is announced, at fifty-one years of age, of Prof. Maxime Bôcher, professor of mathematics in Harvard University since 1904. Prof. Bôcher was president of the American Mathematical Society in 1909–10, and the author of several works on the theory of linear differential equations and related subjects.

MR. LEONARD C. HARVEY has returned from the United States after having carried out for the Director of Fuel Research a full investigation into the progress made in recent years in the application of pulverised coal for metallurgical and general industrial purposes for steam-raising in land and marine boilers and in locomotives on railways. His report will be issued as a Government publication by the Department of Scientific and Industrial Research at an early date.

THE third lecture of the series arranged by the Industrial Reconstruction Council will be held in the Saddlers' Hall, Cheapside, E.C.2, on Wednesday, October 30. The chair will be taken at 4.30 by Sir Wilfrid Stokes, K.B.E., president of the council, and an address on "The Functions of the Government in Relation to Industry" will be given by Mr. W. L. Hichens, managing director of Messrs. Cammell, Laird, and Co. Applications for tickets should be made to the Secretary, I.R.C., 2 and 4 Tudor Street, E.C.4.

THE United States, like our own country, is already feeling the loss of its scientific men through the undiscriminating and brutal hand of war. Prof. J. F. Kemp records in *Science* (September 13) the death of Capt. John Duer Irving, of the 11th U.S. Engineers, editor of *Economic Geology*, and professor of that subject in the Sheffield Scientific School of Yale University. Prof. Irving followed his father, the late R. D. Irving, in paying special attention to deposits of metallic ores and useful minerals. The father was, perhaps, more drawn towards petrology, and his work for the U.S. Geological Survey may be better known than that of the younger man, who died from pneumonia in Flanders at the age of forty-four. It is part of the tragedy that the finest investigations of Prof. Irving will now be published posthumously. A bulletin by him and Dr. S. F. Emmons on the Downtown district of Leadville, Colorado, was issued in 1907. Dr. Emmons's death left the junior author in charge of the revision of the great monograph on Leadville, and the edition now in hand, recording a large number of new observations, will remain for scientific men as Prof. Irving's monument.

THE Wilberforce Museum, controlled by the Corporation of Hull, has recently received a promise of a valuable addition to its collections in a large series of Stuart relics presented by the Rev. W. C. Piercy. It consists of a large number of prints and oil paintings connected with the Stuart period, a miniature of Henrietta Maria, and a memorial ring of Charles I., with a tapestry, said to be of Gobelin manufacture, from the Bardo Palace at Turin, representing Charles I., Queen Henrietta Maria, and Charles II. as a boy. Besides these objects, there is a considerable collection of books relating to the Stuarts. These collections will revert to the museum after the death of Mr. Piercy and his wife.

IN the Journal of the Royal Anthropological Institute (vol. xlviii., part i.) Mr. H. Ling Roth concludes his elaborate monograph on primitive looms. In its earliest stages the loom is so apparently simple that it is very difficult to decide whether it was due to independent invention, inheritance from ancestors in a distant region, or transmitted from one race to another. Origin or invention must precede distribution or copying, and is consequently more remote and obscure than distribution, which in most cases is so obvious that it tends to increase the obscurity of origin. On the whole, Mr. Roth comes to the conclusion that some looms are of independent invention, while others are an inheritance or have been transmitted from one race to another.

SOME new light on the proto-ethnology of the Malay Peninsula is thrown by excavations in caves at Lenggong, Upper Perak, conducted by Mr. I. H. N. Evans, the results of which are published in the Journal of the Federated Malay States Museums (vol. vii., part iv., June, 1918). Amongst other objects, some stone implements were discovered. Whether these had been subjected to a rubbing-down process still remains a matter of doubt. If we are to regard the specimens as being roughly blocked out and unfinished specimens of the Neolithic period, it is difficult to see into what peninsular type or types they are to be included. It is possible that the earliest occupants of these caves did not possess any pottery, but a little may have been in use in the period represented by these implements.

IN *Man* for October Miss M. Murray discusses the question of the so-called "devil's mark," familiar to all students of European witchcraft. After a review of the evidence, the writer draws the conclusion that the mark was coloured, permanent, caused by the pricking or tearing of the skin; that the operator passed his hands or fingers over the place, and that the pain was severe and might last a considerable time. These facts suggest tattooing. Another form of the "devil's mark" was the "little teat." The description points to its being a natural phenomenon, the supernumerary nipple. Cases of polymastia or supernumerary breasts, and polythelia or supernumerary nipples, are constantly observed by modern scholars, and their occurrence is more common than is generally believed, and in many cases is unnoticed, unless well-marked in men or causing discomfort by functioning when in women.

IN the *Eugenics Review* for October (vol. x., No. 3) Prof. J. A. Lindsay discusses the eugenic and social influence of the war. He concludes that "when we come to count up the gains and losses of the war, there can be little doubt to which side the balance will incline. The nation will have lost heavily in man-power, in brain-power, in capital, and in industrial resources. But there will be some not inconsiderable compensations. The nation will, we may hope, emerge from the great ordeal purged of some of its defects. Luxury will diminish, thrift will increase. Food production at home will have received a great stimulus. Education will be on a sounder basis. We shall be more teachable, less self-satisfied, readier to profit by example and by experience."

THERE is a general belief that it is a relatively easy problem to estimate a person's intelligence by looking at him; and teachers, physicians, and employers are often compelled to make judgments as to the intelligence of a given person with no more data than can be obtained from a rapid survey of his appearance; hence such phrases as "he looks bright" or "he looks stupid." Even in the law courts rough estimations of intelligence are sometimes required. In the *Psychological Review* (vol. xxv., No. 4) Mr. R. Pinter gives the results of an investigation he made for the purpose of testing the trustworthiness of these judgments. The author chose twelve photographs of children varying in intelligence from proved feeble-mindedness to unusually great ability, and asked groups of people to arrange the photographs in order of merit for intelligence. His groups consisted of physicians, psychologists, teachers, and miscellaneous people. He found that the group of psychologists was the most nearly correct, but that on the judgment of no one group or of no one person could any reliance be placed. Several observers were consciously influenced by children of their acquaintance whom a photograph happened to resemble, and irrelevant trivialities quite frequently biased the observer's judgment. The author concludes that, although perhaps a living person would be easier to judge than a photograph, nevertheless these haphazard judgments are too untrustworthy to be of practical value; and that, whether the observer be a teacher, physician, or employer, it would be better to use objective standards, and he recommends that the use of mental tests should be considerably extended.

THE fourth and fifth parts of the Report of the Danish Oceanographical Expedition of 1908–10 to the Mediterranean and adjacent seas have just been published (Copenhagen, 1918). No. 4 deals entirely with several groups of the fishes collected—the shore fishes, the Stomiatidæ, Argentinidæ, Microstomidæ, Opisthoprœtidæ, Mediterranean Odontostomidæ, Bramidæ, and Trichiuridæ. No. 5 is also biological, and describes the Mediterranean Scopelidæ; one group of Crustacea, the Hyperiidæ-Amphipoda; the sea-grasses; and the Algæ (except the calcareous species). The reports are wholly systematic, and particular attention is paid to larval and post-larval forms. Schmidt's biometric methods are applied in the descriptions of fishes, and very clearly drawn and printed tables and distributional charts are included. The report is a model of careful editing and admirable printing.

THE Bulletin of the Madras Fisheries Department (No. 11, Government Press, Madras, 1918, edited by Mr. James Hornell) contains a very interesting paper by Sir F. Nicholson, Honorary Director of Madras Fisheries, on carp cultivation in Bavaria. There are thousands of ponds in the kingdom, and they are regarded as more profitable than the same area of good land. As a rule, they are natural hollows, which nearly empty in the winter. About once in ten years they are cropped with oats or some other cereal. They receive drainage from the surrounding area of cultivated land, and the liquid part of the farm drainage is deliberately led into them. Shade is undesirable, and a high water temperature very favourable. The ordinary pond vegetation exists, with a very abundant plankton. The fish are actually cultivated, like trout for stocking purposes in this country. They are fed artificially by cereals, seeds of lupins, maize-cake, fish-meal, bad potatoes, oil-cake, vegetables unfit for the table, etc. In one farm, not the best, the output in one year from a pond of 88 acres was 11,000 lb. of fish. The methods are strongly recommended for adoption in India.

THE vital relation of economic ornithology to agriculture and horticulture is sufficiently obvious to warrant a more extensive and more scientific study than it has yet received. The subject is an intricate one, and much harm has been done by hasty generalisations based upon very inadequate and imperfectly collected data. Few workers have contributed more usefully to the subject than Dr. W. E. Collinge, and the report on his recent investigations, which is published in the September issue of the *Journal of the Board of Agriculture*, is deserving of wide notice. In most previous work the numerical or gravimetric system of estimating the food contents of birds' stomachs has been followed, but Dr. Collinge roundly condemns this in favour of the volumetric method or percentage valuation by bulk. As the result of examinations of 3670 adult birds and 595 nestlings, embracing nine species of wild birds, he draws the conclusion that only two of these species, viz. the house-sparrow and the wood-pigeon, are distinctly injurious, and should be subjected to strong repressive measures. Two others, viz. the rook and the sparrowhawk, are too numerous, and consequently injurious over wide areas, whilst the missel-thrush is too numerous in certain localities; these species could be adequately reduced by a temporary withdrawal of protection. The remaining four species, viz. the skylark, green woodpecker, kestrel, and lapwing, are highly beneficial, and should receive every protection.

THE first annual report of the official seed-testing station of the Board of Agriculture, which is issued in the Board's *Journal* for September, affords abundant justification for the creation of the station in November last. In the eight and a half months of the station's existence up to July 31 no fewer than 7744 samples were dealt with, of which 5676 were sent by seedsmen and 1553 by growers. In course of time the proportion of the latter class will doubtless steadily increase as the facilities provided become more widely known amongst farmers and allotment-holders. More than forty species of seeds were tested, the most numerous being cereals, grasses, clovers, turnips, mangolds, and onions. The report clearly indicates that much worthless seed is liable to get into the hands of farmers, about 1 per cent. of the samples showing a germination of 5 per cent. or less. The quality of a few kinds of seed would seem to have been decidedly below the average of recent years, *e.g.* vetches, English red clovers, trefoil, meadow fescue, timothy, scarlet runner and French beans. Dodder was very prevalent in red clovers, especially in those of Chilian origin, and its presence in samples of other leguminous species is evidence that sufficient attention is not yet paid to the elimination of this parasite. The general significance of the results as outlined in the report merits the most careful consideration of both seedsmen and growers.

WE have received a copy of the register of earthquakes felt or recorded in the Philippine Islands during the year 1917 (U.S. Weather Bureau for December, 1917). The number of earthquakes catalogued is 146; most of them were of moderate intensity. Only two were strong enough to damage buildings slightly, yet, though their epicentres were situated within or close to the Philippine Islands, both were registered at seismological stations all over the world.

IN a paper on the atmospheric scattering of light, which constitutes Publication No. 2495 of the Smithsonian Miscellaneous Collections, Mr. F. E. Fowle, of the Astrophysical Observatory of the Smithsonian Institution, gives the results of an examination of the data collected at Mount Wilson between 1910 and 1916. If the fraction of the light of given wavelength incident at the outer limits of the atmosphere which penetrates to the earth's surface be called the transmission coefficient, this coefficient is found to vary for dry air from about 0·6 at the blue to about 0·9 at the red end of the visible spectrum, its value varying with the inverse fourth power of the wavelength. In addition, there is a slight haziness which reduces the coefficient by 0·5 to 3 per cent. in normal years. The coefficient for dry air is entirely accounted for by the gas molecules according to the theory given by Rayleigh. The coefficients for water-vapour vary from 0·9 to 0·98 over the same range, and follow the same law of variation with wave-length. The absorption is, however, fifty times that to be expected on Rayleigh's theory. The haziness due to the vapour reduces the transmission about 2 per cent. in all parts of the spectrum.

THE Central Argentine Railway has a present mileage of 3300, and serves the northern portion of the Argentine. It has the distinction of being the first of the great railway lines in the Argentine to adopt the modern method of dealing with suburban traffic, and this fact lends interest to a series of illustrated articles in *Engineering* descriptive of the electric traction system employed. Messrs. Merz and McLellan have acted as engineers in conjunction with Messrs. Livesey, Son, and Henderson, and the whole of the apparatus used in connection with the electrification was manufactured in Great Britain. The complete electrification works for the suburban system include a power station of 15,000-kw. capacity, 57 miles of high-tension transmission cables, four traction substations with 14,000 kw. of converting plant, and the electrical equipment of 100 miles of single track. Power is produced in the generating station as three-phase current at 20,000 volts, with a periodicity of 25 cycles, transmitted to the sub-stations, converted to direct current at 800 volts, and supplied to the trains through a third rail. The power plant includes six Babcock and Wilcox water-tube boilers with underfeed stokers, four horizontal reaction turbines with high- and low-pressure cylinders by Messrs. C. A. Parsons and Co., Ltd., together with alternators, transformers, and motors by the same firm.

Engineering for October 18 contains an account of an interesting process for producing wheels and discs by rolling which is in operation at the works of the Cambria Steel Co., Pa. The method, which is due to Mr. E. E. Slick, consists in cutting "cheeses" off 11-in. to 20-in. rolled bars, and then converting these blanks into wheels or discs by a special form of rolling mill, of which drawings are included in the article. The blanks are cut from the hot bar by eccentric shears having cutters with cam-shaped edges, which approach and recede from each other as the cutters rotate. It is this approach of the two edges during a rotation which effects the cut by shearing on a bar placed between the two. The blanks are then reheated and punched so as to leave a hole nearly half-way through them, into which a loose pin is fitted, which serves to centre the blank in the subsequent rolling operation. The rolling mill consists of two shafts set at a slight angle to each other. At adjacent ends each shaft carries a die corresponding with the wheel-form required, and between these dies the blank is placed. One die is fixed axially, and the other can be traversed axially by hydraulic rams. The total thrust exerted by these rams is about 3,000,000 lb. It is claimed that the wheels produced by this process are of uniform texture, and that any piping which may have existed in the centre of the round bar remains in the centre of the punched wheel, and is ultimately removed when the wheel is pierced to take the axle.

WE regret that a reference in a note in our issue of October 10, p. 111, conveyed the impression that the Institute of Chemistry had failed in its efforts to increase its activities. Mr. R. B. Pilcher, registrar and secretary of the institute, informs us that more than one hundred new fellows and more than 650 new associates have been elected since October of last year. All that the writer of our paragraph intended to suggest was that the institute, by opening its doors more widely, would obviate the necessity for the formation of new organisations in the chemical profession; indeed, events are already beginning to show the undesirability of having several organisations representing the profession. We are glad to take this opportunity of congratulating the institute on the success of its progressive policy.

MESSRS. LONGMANS AND CO.'s new announcement list contains the following books relating to science:—"Life of Frederick Courtenay Selous, D.S.O.," J. G.

Millais, with sixteen full-page illustrations; "Ships' Boats: Their Qualities, Construction, Equipment, and Launching Appliances," E. W. Blocksidge; and a new and revised edition of "Recent Advances in Physical and Inorganic Chemistry," Dr. A. W. Stewart, with an introduction by the late Sir William Ramsay, K.C.B., F.R.S., illustrated.

MR. F. EDWARDS, of 83 High Street, Marylebone, has just issued Catalogue No. 384 of books dealing with a variety of subjects, but mainly architecture, printing and bibliography, and bookbinding. The sections appealing more especially to readers of NATURE are those relating to archæology, gardens, and the proceedings of many provincial scientific societies.

MESSRS. J. M. DENT AND SONS, LTD., have received a licence from the Controller of Patents to publish a translation of "The Biology of War," by Prof. G. F. Nicholai, the former holder of the chair of physiology in Berlin University, who, after imprisonment in Germany for his opinions, escaped to Denmark by aeroplane.

OUR ASTRONOMICAL COLUMN.

BORRELLY'S COMET.—L. v. Tolnay gives the following elements of this comet in *Astr. Nach.* (No. 4961); he has computed planetary perturbations, including those of Mars, to which the comet made a near approach at the beginning of 1912:—

$$T = 1918 \text{ Nov. } 16{\cdot}6818 \text{ G.M.T.}$$

$$\left.\begin{array}{l} \omega = 352^\circ\ 23'\ 0{\cdot}73'' \\ \text{☊} = 77^\circ\ 1'\ 47{\cdot}71'' \\ i = 30^\circ\ 29'\ 29{\cdot}01'' \end{array}\right\} 1925{\cdot}0$$

$$\phi = 37^\circ\ 57'\ 20{\cdot}77''$$

$$\mu = 513{\cdot}90816''$$

The following ephemeris is from a Marseilles Circular (for Greenwich midnight):—

	R.A. h. m. s.	N. Decl. °	Log *r*	Log Δ
Nov. 2	6 33 30	2 20	0·1478	9·7978
6	6 38 58	4 52	0·1463	9·7766
10	6 44 1	7 44	0·1454	9·7561
14	6 48 35	10 57	0·1449	9·7367
18	6 52 37	14 30	0·1449	9·7190
22	6 56 3	18 24	0·1453	9·7035
26	6 58 49	22 36	0·1462	9·6910
30	7 0 49	27 2	0·1476	9·6822

Harvard Bulletin (No. 669) gives the following observations made at the Yerkes Observatory by Mr. Van Biesbroeck:—

G.M.T.	R.A. h. m. s.	S. Decl. ° ′ ″
Aug. 31·89146	4 39 19·15	14 1 50·0
Sept. 5·91563	4 45 18·78	13 29 47·4

The comet had a diffused elongated nucleus in P.A. 95°, a tail 40″ long in the same direction; its magnitude was 13; it may rise to the 9th magnitude in November, being fairly near the earth.

WOLF'S COMET.—The following is a continuation of M. Kamensky's ephemeris for Greenwich midnight:—

	R.A. h. m. s.	Decl. ° ′	Log *r*	Log Δ
Nov. 2	21 4 59	2 50 N.	0·2138	0·0608
6	21 13 52	1 48	0·2112	0·0677
10	21 23 8	0 51 N.	0·2088	0·0749
14	21 32 46	0 1 S.	0·2066	0·0824
18	21 42 42	0 49	0·2048	0·0904
22	21 52 56	1 31	0·2032	0·0986
26	22 3 24	2 8	0·2018	0·1072
30	22 14 3	2 40 S.	0·2008	0·1159

The comet is likely to be of the 10th or 11th magnitude.

SOLAR-LINE DISPLACEMENTS AND RELATIVITY.—A further contribution to the study of solar-line displacements in connection with Einstein's theory of relativity has been made by Mr. J. Evershed (*The Observatory*, vol. xli., p. 371). Thirty of the lines composing the cyanogen band $\lambda 388$ were carefully selected for observation, and their displacements determined by comparison with the corresponding lines in the carbon arc. The provisional mean values for the shifts are +0·004 A at the centre of the disc, and +0·006 A at the polar limbs. There appears to be a curious systematic difference in the results for the north and south polar limbs, the former agreeing approximately with the centre of the disc, while the latter consistently showed the much larger displacement of +0·008 A. The displacements as a whole are larger than those found by Dr. St. John, but they are still, on the average, not much more than half the predicted gravitational effect, whilst for iron lines the shifts are in many cases twice as great at the limb as is required on the relativity hypothesis. In explanation of the limb displacements Mr. Evershed suggests that the effect may possibly be due to the unsymmetrical shading towards the red of the majority of the Fraunhofer lines, which would be emphasised at the limb in consequence of the longer path of the photospheric light through the absorbing vapours. A large proportion of iron lines have, in fact, been found to be very slightly shaded towards the red in the laboratory spectrum. In agreement with Dr. St. John, Mr. Evershed considers his results unfavourable to the theory of relativity.

SCIENTIFIC AND PRACTICAL METRIC UNITS.

WE have received a communication from Dr. John Satterley, of the University of Toronto, with reference to Sir Napier Shaw's article on "Units and Unity" in NATURE for June 27, in which he complains of "the bewildering array of powers of ten" that hamper the C.G.S. system of electro-magnetic units and the practical units of electricity. Dr. Satterley makes the same complaint of other measures based on the metric system, which he admits is admirable for purposes of scientific measurement, but not for everyday use until it is simplified and the names of its units are shortened. He cites the milliwatt as representing a complication so intricate that nobody but a professional metricist knows what it is.

The communication represents the impossible position which some teachers of science practically take up consciously or unconsciously. The introduction of C.G.S. units into scientific measurement is an accomplished fact; and if scientific measurement is to be the headlight of practical life, it is absurd for the ordinary sensible man to be kept in ignorance of the units with which scientific men work. It has been remarked in some quarters that Sir Napier Shaw's article should have been addressed to the uninformed and unconverted: that readers of NATURE were all agreed upon the question. But if the agreement is only with the reservation that the organised system of physical units as it exists is reserved for the inner circles of scientific society, while the inch and the English system are good enough for the ordinary dealings of everyday life, it is obvious that the practical applications of science in this country must continue to be crippled as heretofore.

The beginning of Dr. Satterley's complaint is that "metricists are continually inventing new units—practical units (so-called) which are multiples of the centimetre, the gram, and the dyne." Who are the